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Erratum: NLO QCD + NLO EW corrections to WZZ productions with leptonic decays at the LHC

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Due to some errors in the calculation of the differential cross sections, we made the following corrections.

1. Figures 3–8 are replaced by the following corresponding revised figures, respectively.

2. The sixth sentence of the second paragraph of section 3.3 should be changed to "In the plotted M_{W^+ZZ} region, the NLO QCD+EW relative corrections in the inclusive and exclusive event selection schemes range from 123% to 170% and from -1% to 38%, respectively.".

3. The third sentence of the third paragraph of section 3.3 should be changed to "From the figures we can see that the NLO QCD relative corrections in the inclusive and exclusive event collection schemes are about 165% and 33%, respectively, at the position of $y_{W^+ZZ} = 0$.".

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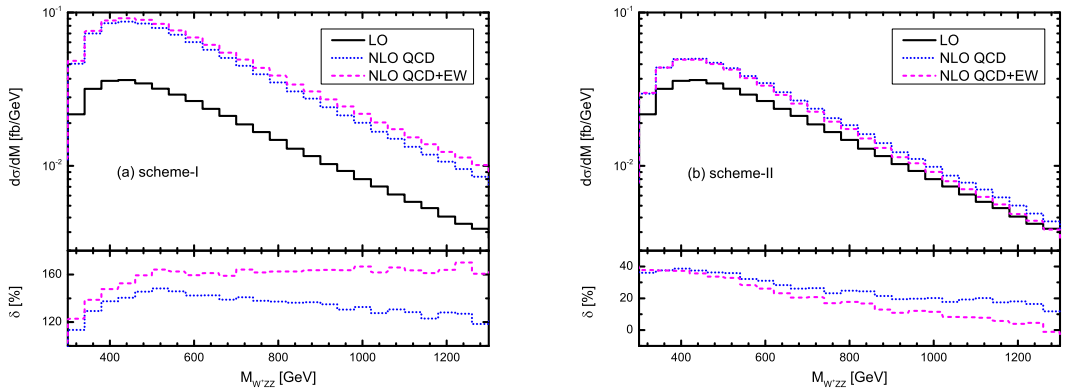

Figure 3. The W^+ZZ invariant mass distributions $d\sigma_{\rm LO}/dM_{W^+ZZ}$ (solid), $d\sigma_{\rm QCD}/dM_{W^+ZZ}$ (dotted), $d\sigma_{\rm NLO}/dM_{W^+ZZ}$ (dashed) and the corresponding relative corrections for $pp \to W^+ZZ+X$ at the $\sqrt{S} = 14\,\text{TeV}$ LHC in the (a) inclusive and (b) exclusive event selection schemes.

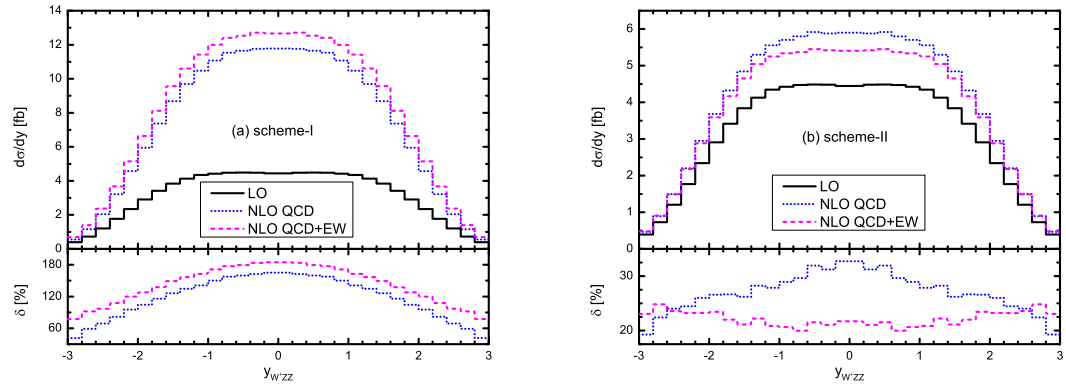

Figure 4. The W^+ZZ rapidity distributions $d\sigma_{\rm LO}/dy_{W^+ZZ}$ (solid), $d\sigma_{\rm QCD}/dy_{W^+ZZ}$ (dotted), $d\sigma_{\rm NLO}/dy_{W^+ZZ}$ (dashed) and the corresponding relative corrections for $pp \to W^+ZZ + X$ at the $\sqrt{S} = 14\,\text{TeV}$ LHC in the (a) inclusive and (b) exclusive event selection schemes.

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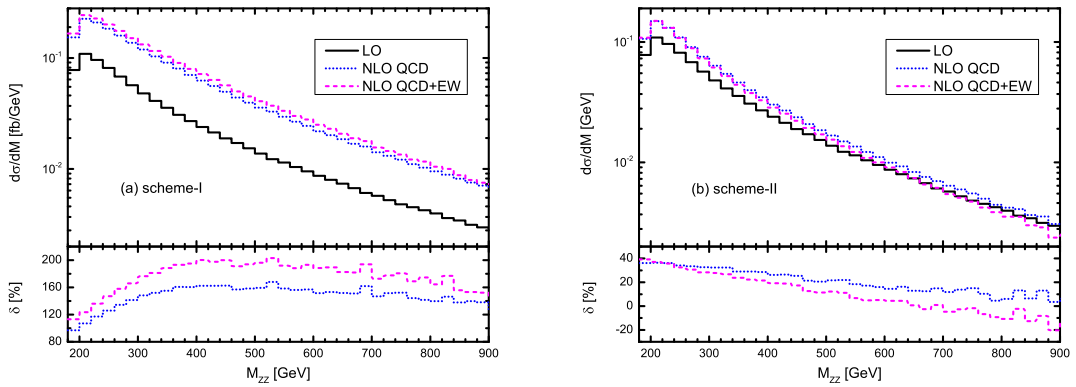

Figure 5. The Z-pair invariant mass distributions $d\sigma_{\rm LO}/dM_{ZZ}$ (solid), $d\sigma_{\rm QCD}/dM_{ZZ}$ (dotted), $d\sigma_{\rm NLO}/dM_{ZZ}$ (dashed) and the corresponding relative corrections for $pp \to W^+ZZ + X$ at the $\sqrt{S} = 14\,\text{TeV}$ LHC in the (a) inclusive and (b) exclusive event selection schemes.

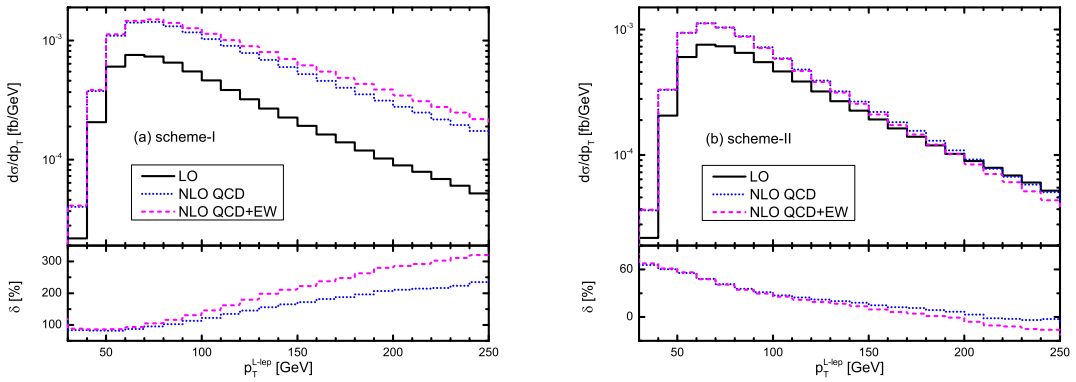

Figure 6. The leading lepton transverse momentum distributions $d\sigma_{\rm LO}/dp_T^{\text{L-lep}}$ (solid), $d\sigma_{\rm QCD}/dp_T^{\text{L-lep}}$ (dotted), $d\sigma_{\rm NLO}/dp_T^{\text{L-lep}}$ (dashed) and the corresponding relative corrections for $pp \to W^+ZZ \to \ell_1^+\nu_{\ell_1}\ell_2^+\ell_2^-\ell_3^+\ell_3^- + X$ at the $\sqrt{S} = 14\,\text{TeV}$ LHC in the (a) inclusive and (b) exclusive event selection schemes.

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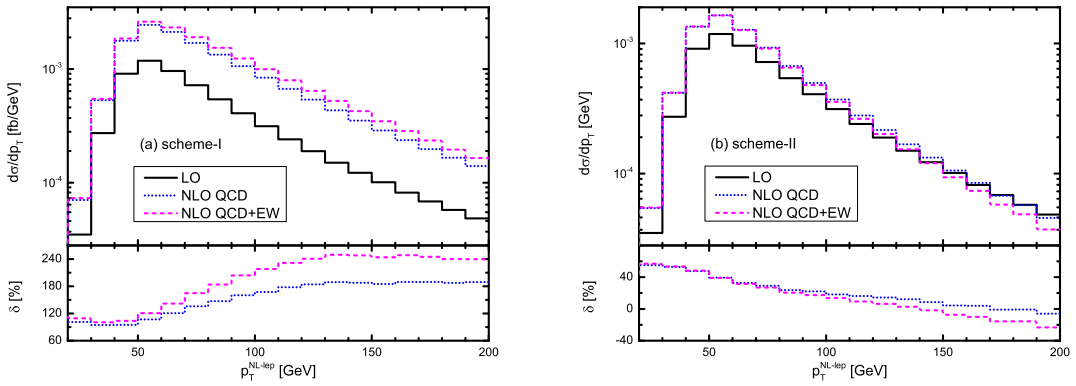

Figure 7. The next-to-leading lepton transverse momentum distributions $d\sigma_{\rm LO}/dp_T^{\rm NL\text{-}lep}$ (solid), $d\sigma_{\rm QCD}/dp_T^{\rm NL\text{-}lep}$ (dotted), $d\sigma_{\rm NLO}/dp_T^{\rm NL\text{-}lep}$ (dashed) and the corresponding relative corrections for $pp \to W^+ZZ \to \ell_1^+\nu_{\ell_1}\ell_2^+\ell_2^-\ell_3^+\ell_3^- + X$ at the $\sqrt{S} = 14\,\text{TeV}$ LHC in the (a) inclusive and (b) exclusive event selection schemes.

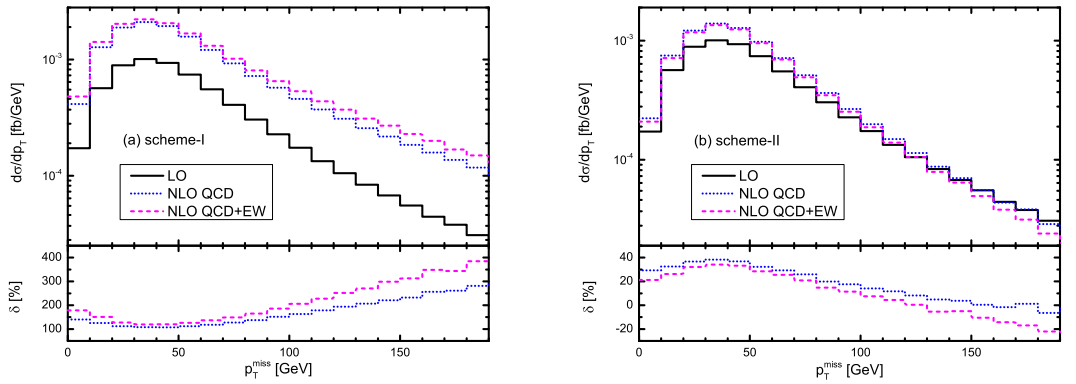

Figure 8. The missing transverse momentum distributions $d\sigma_{\rm LO}/dp_T^{\rm miss}$ (solid), $d\sigma_{\rm QCD}/dp_T^{\rm miss}$ (dotted), $d\sigma_{\rm NLO}/dp_T^{\rm miss}$ (dashed) and the corresponding relative corrections for $pp \to W^+ZZ \to \ell_1^+\nu_{\ell_1}\ell_2^+\ell_2^-\ell_3^+\ell_3^- + X$ at the $\sqrt{S} = 14\,\text{TeV}$ LHC in the (a) inclusive and (b) exclusive event selection schemes.

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4. The fourth sentence of the fourth paragraph of section 3.3 should be changed to "The NLO QCD relative correction can exceed 138% when $M_{ZZ} > 300\,\text{GeV}$ in the inclusive event collection scheme, and is less than 36% in the whole plotted M_{ZZ} region in the exclusive event collection scheme.".

5. The fourth sentence from the bottom of the fifth paragraph of section 3.3 should be changed to "For example, we can read out from figure 6a that the NLO QCD relative correction in the inclusive event selection scheme increases from 82% to 235% as the increment of $p_T^{\text{L-lep}}$ from 50 GeV to 250 GeV.".

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